



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,200	01/11/2006	Takashi Kariya	282371US90PCT	7428
22850	7590	03/26/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER ABRAMS, NEIL	
			ART UNIT 2839	PAPER NUMBER
			NOTIFICATION DATE 03/26/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/564,200	Applicant(s) KARIYA ET AL.	
	Examiner Neil Abrams	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3-6-08, 2-25-08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The filing of a request for continued examination (RCE) is acknowledged. A first action follows.

Claims 1-3 and 5-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Azuma in view of Turlik, Faroog, Ikeda Milkovich, Barrett and the Japan patent 59-996. The references are applied as in the last office action but with Barrett now applied for additional teaching of holes see holes 18 in fig 1A in grid form.. For claims 1,11 obvious to so form those of Azuma in view of both Barrett and the. Japan patent and for claim 11 to form the holes in staggered form as in Barrett fig 5, this would only be standard procedure for ease of manufacture and the staggered form provides greater separation to prevent shorting. Barrett figs 3A,3B also provides additional teaching of the thickness ratio of interposer and substrate Obvious to use such ratio in Azuma assembly as standard in the art

Claims 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claim 1 above, and further in view of Chang

Chang provides additional teaching of staggered grid use, usable in Azuma to as standard way to arrange holes or pads

Claims 2, 5, 9, 12, 14, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1 and 11 above, and further in view of Uchikawa

The references are applied as in the last office action .. For claim 20 the use of ground and voltage are standard expedients and a separate rejection for claim 20 is not applied

Applicant's arguments filed with the last amendment have been fully considered but they are not persuasive. The arguments are largely directed to hole size. Such hole size selection is seen to be a matter of typical engineering design based on criteria such as current needs and efforts to increase density to lower size of the resultant product and not a matter to overcome the rejection. Nor has applicant shown that the recited size does not encompass hole size in the typical interposer. The recited Young's modulus range is seen to cover typical products in use and this aspect does not appear to be at issue. Arguments to substrate thickness do not overcome the rejection. None of the claims positively set forth the package substrate and therefore the recitations relating to such substrate are only matters of intended use and cannot be relied upon to avoid the rejection. In addition the recited thickness range is very extensive, interposer thickness of one twentieth substrate thickness to one and a half times substrate thickness as to appear to encompass most or all standard uses of interposer-- substrate assemblies and further to be met by the cited patent examples

Any inquiry concerning this communication should be directed to Neil Abrams at telephone number 571-272-2089.

/Neil Abrams/

Primary Examiner, Art Unit 2839

Application/Control Number: 10/564,200
Art Unit: 2839

Page 4

.

.